

# CALIFORNIA, ~~STATE~~ BOARD OF HEALTH.

## MONTHLY BULLETIN.

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No. 1

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### STATE BUREAU OF VITAL STATISTICS.

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### STATE HYGIENIC LABORATORY.

ARCHIBALD R. WARD, D.V.M., <i>Director</i> .....	University of California, Berkeley
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### STATE FOOD AND DRUG LABORATORY.

M. E. JAFFA, M.S., <i>Director</i> .....	University of California, Berkeley
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### DIPHTHERIA IN SOUTHERN CALIFORNIA STATE HOSPITAL.

Diphtheria made its appearance in the Southern California State Hospital during the latter part of April and was vigorously handled by Dr. Williamson and his assistants, and all the inmates immunized with antitoxin. The disease was apparently stamped out, but about the 20th of June cases began to appear again, though of a milder type, evidently being favorably affected by the antitoxin used during the first epidemic. Its appearance in several wards made it probable that there were one or many "bacillus carriers" in the institution, and the State Board of Health decided to make a culture from the nose and throat of every person connected with the institution. Miss Margaret Henderson, of the Bacteriological Laboratory, was consequently sent to the Hospital equipped to do this work. Taking the ward which had given the most cases first, she went carefully through the institution, examined each one of the 1,115 people, finding 134 positive cases. These were all isolated in outside buildings and a second examination begun. This will undoubtedly clean them all out.

Many of the positive cases had no clinical symptoms, and but for the bacterial examination would have remained to infect others. No one is allowed to return to the buildings until after two negative examinations made twenty-four hours apart, care being taken to swab the throat long after eating or drinking, or the use of medicine. There is small probability of more cases occurring unless a re-infection occurs from the outside.

### MOSQUITOES.

It was but a few years ago that it was proven that mosquitoes are the cause of malaria, and scarcely four when the work of extermination was begun in this State. Even now it is not universal, and we find towns where mosquitoes are plenty as ever. It is with real pleasure

that we record the success of a campaign against this pest carried on by the Board of Health of Auburn. The name of that town formerly made some people "shake." Now malaria is unknown unless brought from some less progressive town. They drained the wet places where possible, required the ditch company to cement its ditches, oiled the pools that could not be drained, and conducted a general cleaning up campaign. One can sleep there in the open now and not be afraid of catching malaria or being annoyed by mosquitoes.

Other towns have done as well and all should follow their lead. The expense is not great and the resulting comfort vastly more than compensates. Ranches should be free from the pest, for generally they control the situation at their homes. Mosquitoes breed only in water, never in grass and weeds, although these make a good hiding place for them and should be destroyed. All low places where water stands should be drained, and where that is impossible, crude oil should be put upon the water. This will kill the larvæ as they come up to breathe. No standing water should be allowed in barrels, buckets, or old cans, for here is just where they like to breed. The watering troughs are also danger places and should be drained and rinsed out twice a week. The water tank at the windmill should be carefully covered with a fine meshed wire screen, and if the vault, as some do, holds water, it should be oiled. The same principle is involved in city and country,—leave no standing water uncovered.

"What is so rare as a day in June,  
When birds and nature are all in tune,  
When the call of the wild hath a real charm,  
And the solitude of a quiet farm  
Is a blessed boon and a calm retreat  
From the rustle and noise of the city street?  
When you love to hunt up a shady spot  
Where the breeze is cool when the day is hot,  
And to snooze and stretch is your chief delight,  
For you rest all day and you rest all night;  
No worry or care, and again I say  
What is so rare as a bright June day  
If the mosquito has gone on the final way?"

#### HOT WEATHER AND FOOD.

When one in the East reads of the thermometer registering from 100 to 110 in the shade in California, and knowing the terrible effect there of a temperature as high as 85, they have for us the deepest sympathy. For this we are duly grateful, but it is unnecessary, for rarely is there any great degree of discomfort. One will be "hot" but not prostrated, owing, of course, to our dry non-humid atmosphere.

While we get no prostrations it does not signify that one should live the same as during the cooler months. Much trouble and sickness is caused by improper food and drink. Many use the same amount of meat as in the winter and wash it down with beer or wine. Nature provides us here with a vast variety of fruits and vegetables, and these, with plenty of cool water to drink, are the proper food for these hot days. Eggs and a very limited amount of meat may be used, but meat, meat, meat, three times a day and seven days a week is killing more people than any communicable disease we have to deal with, except, perhaps, consumption. Cut out your meat and see how much better you feel at the end of a month.

## DEPARTMENT OF VITAL STATISTICS.

GEORGE D. LESLIE, STATISTICIAN.

### GENERAL MARRIAGE STATISTICS: 1907 and 1906.

*Summary.*—There were 17,253 marriages in 1907, and 15,790 in 1906, which were the first for both parties, the per cents being respectively 75.0 and 74.1, or a gain of 0.9 for 1907, as compared with 1906.

The proportion of first marriages was considerably higher each year for San Francisco than for any other geographic division, though not as high as for certain small counties in the interior mountains. The proportion of marriages where both parties were single is very low indeed, however, for Marin and San Mateo counties adjoining San Francisco, as well as for Orange adjoining Los Angeles.

In 1907 there were 2,320 marriages of single men with widows or divorcees, but only 1,742 marriages of single women with widowers or divorced men, the corresponding figures for 1906 being 2,238 and 1,674. Each year only a few counties showed exceptions to the rule that there are more unions of bachelors with widows than of maids with widowers.

In 1,690 cases, or 7.3 per cent of all, in 1907, and in 1,615, or 7.6 per cent, in 1906, the marriages were the second or over for both grooms and brides. Marriages where both parties were widowed or divorced occur less in the metropolis than in the suburbs, and less in the whole urban area than in sparsely settled rural counties.

*Number in Order.*—The table on the following page shows the number in order of marriages, with per cents, for the three main and eight minor geographic divisions, as well as certain other groups of counties, in both 1907 and 1906.

It appears from this table that of 23,005 marriages in 1907, 17,253 were first marriages for both parties; 2,320 were first marriages for the grooms only; 1,742 were first marriages for the brides only; and 1,690 were second marriages or over for both grooms and brides. Of 21,317 marriages in 1906, there were 15,790 in which neither party had been married before; 2,238 where only the grooms were single; 1,674 where only the brides were single, and 1,615 where both grooms and brides were widowed or divorced.

The per cent of marriages which were the first for both parties was 75.0 in 1907, as compared with 74.1 in 1906, a rise of 0.9 in the per cent of first marriages. On the other hand, the per cent of marriages which were the first for the grooms only was 10.1 in 1907, against 10.5 in 1906; the per cent which were the first for the brides only was 7.6 in 1907, against 7.8 in 1906; and the per cent which were the second or over for both grooms and brides was 7.3 in 1907, against

7.6 in 1906. That is, in 1907, as compared with 1906, there was a notable gain in the proportion of marriages where both parties were single and slight decreases in the proportion of marriages where either the groom or bride, or each of them, was widowed or divorced.

**Marriages Classified by Number in Order, with Per Cents, for Geographic Divisions:  
1907 and 1906.**

GEOGRAPHIC DIVISION.	Total Marriages.	NUMBER OF MARRIAGE.				PER CENT OF MARRIAGES.			
		1st of Both Parties.	1st of Groom Only.	1st of Bride Only.	2d or Over of Both.	1st of Both Parties.	1st of Groom Only.	1st of Bride Only.	2d or Over of Both
1907.									
THE STATE-----	23,005	17,253	2,320	1,742	1,690	75.0	10.1	7.6	7.3
Northern California-----	2,278	1,754	206	157	161	77.0	9.0	6.9	7.1
Coast counties-----	1,168	897	106	82	83	76.8	9.1	7.0	7.1
Interior counties-----	1,110	857	100	75	78	77.2	9.0	6.8	7.0
Central California-----	13,450	10,264	1,354	945	887	76.3	10.1	7.0	6.6
San Francisco-----	4,158	3,316	372	281	189	79.8	8.9	6.8	4.5
Other bay counties-----	4,169	3,045	466	345	313	73.0	11.2	8.3	7.5
Coast counties-----	1,697	1,299	169	108	121	76.5	10.0	6.4	7.1
Interior counties-----	3,426	2,604	347	211	264	76.0	10.1	6.2	7.7
Southern California-----	7,277	5,235	760	640	642	71.9	10.5	8.8	8.8
Los Angeles-----	4,847	3,541	479	418	409	73.1	9.9	8.6	8.4
Other counties-----	2,430	1,694	281	222	233	69.7	11.6	9.1	9.6
Northern and Central California-----	15,728	12,018	1,560	1,102	1,048	76.4	9.9	7.0	6.7
Coast counties-----	11,192	8,557	1,113	816	706	76.5	9.9	7.3	6.3
Interior counties-----	4,536	3,461	447	286	342	76.3	9.9	6.3	7.5
Metropolitan area-----	8,327	6,361	838	626	502	76.4	10.1	7.5	6.0
Rural counties-----	7,401	5,657	722	476	546	76.4	9.8	6.4	7.4
1906.									
THE STATE-----	21,317	15,790	2,238	1,674	1,615	74.1	10.5	7.8	7.6
Northern California-----	2,077	1,600	201	133	143	77.0	9.7	6.4	6.9
Coast counties-----	1,047	809	101	67	70	77.3	9.6	6.4	6.7
Interior counties-----	1,030	791	100	66	73	76.8	9.7	6.4	7.1
Central California-----	12,573	9,377	1,362	946	888	74.6	10.8	7.5	7.1
San Francisco-----	3,539	2,742	353	255	189	77.5	10.0	7.2	5.3
Other bay counties-----	4,217	3,026	515	336	340	71.7	12.2	8.0	8.1
Coast counties-----	1,642	1,208	172	144	118	73.6	10.5	8.8	7.1
Interior counties-----	3,175	2,401	322	211	241	75.6	10.1	6.7	7.6
Southern California-----	6,667	4,813	675	595	584	72.2	10.1	8.9	8.8
Los Angeles-----	4,506	3,329	417	383	377	73.9	9.2	8.5	8.4
Other counties-----	2,161	1,484	258	212	207	68.7	11.9	9.8	9.6
Northern and Central California-----	14,650	10,977	1,563	1,079	1,031	74.9	10.7	7.4	7.0
Coast counties-----	10,445	7,785	1,141	802	717	74.5	10.9	7.7	6.9
Interior counties-----	4,205	3,192	422	277	314	75.9	10.0	6.6	7.5
Metropolitan area-----	7,756	5,768	868	591	529	74.4	11.2	7.6	6.8
Rural counties-----	6,894	5,209	695	488	502	75.5	10.1	7.1	7.3

The per cent of first marriages for both parties was highest each year for Northern California, next for Central California, and lowest for Southern California. The per cents for Northern and Central

California together were 76.4 in 1907, and 74.9 in 1906, as compared with respectively 71.9 and 72.2 for the counties south of Tehachapi.

The per cents of first marriages are not far from the same for the metropolitan area as for the rural counties of Northern and Central California, being 76.4 for each group in 1907 and 74.4 for the metropolitan area, against 75.5 for the rural counties in 1906. However, in the metropolitan area there are wide differences between the per cents for San Francisco and for the other bay counties, the per cents for the metropolis proper being no less than 79.8 and 77.5 in 1907 and 1906 (or the highest among geographic divisions), but only 73.0 and 71.7, respectively, for the group of suburban counties (Alameda, Contra Costa, Marin and San Mateo). Similarly the per cents of first marriages were 73.1 and 73.9 for Los Angeles in 1907 and 1906, but as low as 69.7 and 68.7 for the other counties of Southern California.

The proportion of marriages where both parties were single is very high for certain small counties. Thus, all of the few marriages in Sierra County in 1907 and in Alpine and Mariposa in 1906 were first marriages for both parties, while the per cent of first marriages was also very high in 1906 for El Dorado (91.7), Inyo (92.3), and Plumas (95.2).

The per cents of first marriages, however, are very low indeed for individual counties adjoining San Francisco and Los Angeles. Thus, for counties adjoining San Francisco, the per cents were only 66.9 and 66.3 for San Mateo in 1907 and 1906, and as low as 64.0 and 61.3, respectively, for Marin. Likewise the per cents of first marriages for Orange county adjoining Los Angeles were only 66.8 in 1907 and 65.3 in 1906. There are only a few other counties in the State where in 1907 or 1906 less than 70.0 per cent of the marriages were first marriages for both parties, the additional counties in 1907 being Del Norte, Madera, Riverside, San Diego, and Santa Barbara, and in 1906 Kern, San Diego, San Joaquin, Santa Barbara, and Santa Cruz.

In 1907 there were 2,320 marriages which were the first for only the grooms, as compared with only 1,742 which were the first for only the brides. Similarly in 1906 the first marriages for only the grooms numbered 2,238, against only 1,674 for first marriages of the brides alone. The excess of first marriages of grooms only over first marriages of brides only was 578, or 33.2 per cent, in 1907, and 564, or 33.7 per cent, in 1906. In other words, the number of single men marrying widowed or divorced women is about one third greater than the number of single women marrying widowed or divorced men. No main or minor geographic division of California shows any departure from this rule that there are more unions of bachelors with widows than of maids with widowers. There were exceptions to the rule, and only slight exceptions at that, for only ten counties in 1907 (Colusa, Lake, Lassen, Nevada, Riverside, San Benito, Sutter, Tehama, Ventura, and Yuba), and for only seven in 1906 (Kings, Lake, Lassen, San Benito, Siskiyou, Sutter, and Tuolumne). In five other counties in 1907 (Calaveras, Inyo, Merced, Modoc, and Tuolumne) and in three others in 1906 (Nevada, San Bernardino, and Santa Barbara) there were exactly the same number of marriages

where only the grooms were single as where only the brides were single. But in all the remaining counties of the State the rule holds good that there are many more marriages between bachelors and widows than between maidens and widowers.

The per cent of marriages which were the second or over for both grooms and brides (7.3 for the State in 1907, against 7.6 in 1906) is higher for the counties south of Tehachapi than for those to the north. The per cent for Southern California was 8.8 each year, while for Northern and Central California together it was only 6.7 in 1907 and 7.0 in 1906. The per cent of marriages where both parties were widowed or divorced was highest of all, 9.6 each year, for the counties of Southern California other than Los Angeles, being 8.4 for Los Angeles alone each year. In Northern and Central California the per cents for the rural counties were 7.4 and 7.5 in 1907 and 1906, as compared with only 6.0 and 6.8, respectively, for the metropolitan area. Moreover, in the metropolitan area the per cents were no less than 7.5 in 1907 and 8.1 in 1906 for the suburban counties, against only 4.5 and 5.3, respectively, or the lowest of all each year, for San Francisco alone. Marriages between widowed or divorced men and women occur less in San Francisco than in the suburbs, and less in a metropolitan center such as either San Francisco or Los Angeles than in sparsely settled rural counties. Thus, the counties in which at least one tenth of the marriages were between widowers and widows were in 1907 Del Norte, Inyo, Marin, San Diego, San Mateo, Siskiyou, and Tulare, and in 1906 Lake, Marin, Mono, Orange, San Bernardino, Solano, Tehama, and Tuolumne.

#### VITAL STATISTICS FOR JUNE.

*Births.*—The living births registered in June number 2,287, against 2,400 for May. For an estimated State population of 2,019,519 the June total represents an annual birth-rate of 13.8, as compared with 14.0 for May.

The June totals were highest for the following counties: San Francisco, 598; Los Angeles, 500; Alameda, 266; Santa Clara, 98; Fresno, 92; Sacramento, 84; and San Bernardino, 58.

The births registered in the leading freeholders' charter cities for June were: San Francisco, 598; Los Angeles, 330; Oakland, 134; Sacramento, 74; Berkeley, 48; Alameda, 47; San José, 42; Pasadena, 40; Fresno, 38; and Riverside and San Bernardino, each 27.

*Marriages.*—The marriages reported for June number 2,251, against only 1,653 for May, the month of June being a favorite one for weddings. The June total represents an annual marriage-rate of 13.6, as compared with merely 9.7 for May.

The June totals were highest for the following counties: Los Angeles, 500; San Francisco, 432; Alameda, 293; Santa Clara, 82; Sacramento, 80; Orange, 76; San Joaquin, 59; Fresno, 57; and San Diego, 52.

*Deaths.*—Altogether 2,508 deaths, exclusive of stillbirths, were reported for June, against 2,554 for May. The annual death-rate for June is 15.2, as compared with 14.9 for May.

The June death totals were highest for the following counties: Los Angeles, 504; San Francisco, 481; Alameda, 284; Sacramento, 103; Santa Clara, 88; Fresno, 82; San Bernardino, 77; San Joaquin, 70; and San Diego, 68.

Deaths for June were reported, as follows, for the leading cities: San Francisco, 481; Los Angeles, 301; Oakland, 147; Sacramento, 65; San Diego, 56; Fresno and Pasadena, each 32; and Berkeley and Stockton, each 31.

*Causes of Death.*—In June there were 396 deaths, or 15.8 per cent of all, from diseases of the circulatory system and 378, or 15.1 per cent, from all forms of tuberculosis, heart disease thus leading tuberculosis slightly.

Other notable causes of death in June were: Violence, 287; diseases of the digestive system, 257; diseases of the respiratory system, 223; diseases of the nervous system, 222; cancer, 150; Bright's disease and nephritis, 129; and epidemic diseases, 104.

The leading epidemic diseases in June were: typhoid fever, 28; diphtheria and croup, 21; whooping-cough, 17; measles, 16; scarlet fever, 11; and all others, 11.

Further details appear in the following table, which gives the number of deaths from certain principal causes reported for California in June, as well as the proportions from each cause per 1,000 total deaths for both June and May:

Cause of Death.	Deaths: June.	Proportion per 1,000.	
		June.	May.
ALL CAUSES.....	2,508	1,000.0	1,000.0
Typhoid fever.....	28	11.2	17.6
Malarial fever.....	5	2.0	3.1
Measles.....	16	6.4	5.9
Scarlet fever.....	11	4.4	4.7
Whooping-cough.....	17	6.8	9.4
Diphtheria and croup.....	21	8.4	7.8
Influenza.....	1	0.4	2.3
Other epidemic diseases.....	5	2.0	2.0
Tuberculosis of lungs.....	323	128.8	135.5
Tuberculosis of other organs.....	55	21.9	20.4
Cancer.....	150	59.8	54.4
Other general diseases.....	105	41.9	34.5
Meningitis.....	34	13.5	23.5
Other diseases of nervous system.....	188	74.9	77.9
Diseases of circulatory system.....	396	157.9	151.5
Pneumonia and broncho-pneumonia.....	160	63.8	73.6
Other diseases of respiratory system.....	63	25.1	20.4
Diarrhea and enteritis, under 2 years.....	100	39.9	23.1
Diarrhea and enteritis, 2 years and over.....	13	5.2	6.3
Other diseases of digestive system.....	144	57.4	47.0
Bright's disease and nephritis.....	129	51.4	55.6
Childbirth.....	26	10.4	12.9
Diseases of early infancy.....	77	30.7	41.1
Suicide.....	60	23.9	22.3
Other violence.....	227	90.5	78.7
All other causes.....	154	61.4	68.5

*Geographic Divisions.*—The table below shows the number of deaths from main classes of diseases reported for June for the several

geographic divisions of the State, including the metropolitan area, or "Greater San Francisco," in contrast with the rural counties north of Tehachapi:

Geographic Division.	DEATHS: JUNE.									
	All Causes	Epidemic Diseases	Tuberculosis (All Forms)	Cancer	Diseases of Nervous System	Diseases of Circulatory System	Diseases of Respiratory System	Diseases of Digestive System	Violence	All Other Causes
THE STATE	2,508	104	378	150	222	396	223	257	287	491
Northern California	314	13	38	14	26	60	28	31	41	63
Coast counties	135	3	17	6	17	31	11	12	11	27
Interior counties	179	10	21	8	9	29	17	19	30	36
Central California	1,455	65	185	88	125	233	142	152	181	284
San Francisco	481	18	49	42	39	89	47	45	62	90
Other bay counties	366	12	58	22	24	60	40	34	42	74
Coast counties	161	10	16	7	16	28	19	21	13	31
Interior counties	447	25	62	17	46	56	36	52	64	89
Southern California	739	26	155	48	71	103	53	74	65	144
Los Angeles	504	13	108	34	44	79	36	48	43	99
Other counties	235	13	47	14	27	24	17	26	22	45
Northern and Central California	1,769	78	223	102	151	293	170	183	222	347
Metropolitan area	847	30	107	64	63	149	87	79	104	164
Rural counties	922	48	116	38	88	144	83	104	118	183

## DEPARTMENT OF BACTERIOLOGY.

BY A. R. WARD, DIRECTOR STATE HYGIENIC LABORATORY.

### MILK AS AN AGENT IN THE TRANSMISSION OF DISEASE.

It is now fully recognized by epidemiologists that typhoid fever may prevail to a serious degree in a city provided with a satisfactory water supply. In the past, too great emphasis has been laid upon water as the source of typhoid. No one denies the rôle of water as the cause of the many great epidemics which have been so exhaustively studied and which have furnished such good arguments for the improvement of public water supplies.

Nevertheless, Washington, D. C., after installing a filtration plant, had in 1907, thirty-five deaths from typhoid per 100,000; good for Washington, but bad as compared with some European cities.

Dr. Rosenaw, Director of the Hygienic Laboratory of the Public Health and Marine Hospital Service, reported at the A. M. A. meeting in Chicago that eleven per cent of all typhoid in Washington in 1906 was traceable to milk, and nine per cent in 1907. The figures were regarded as low, for the reason that epidemic cases only could be clearly traced. He quoted Whipple as stating his belief that twenty-five per cent of all typhoid is attributable to milk.

Bacilli carriers are regarded as an important factor in the pollution of milk by typhoid. This phase of the matter is perplexing, for as yet no satisfactory means have been devised for meeting this menace to the public health. It has been estimated that there is at large in the community such a great number of healthy people disseminating typhoid bacilli that any idea of restraining them is out of the question. Furthermore, the labor of discovering them is prohibitive.

In Bulletin No. 41, Hygienic Laboratory, Public Health and Marine Hospital Service, Dr. John W. Trask has brought together a record of one hundred and seventy-nine milk bourn typhoid fever epidemics. This does not include a little milk bourn epidemic in Berkeley two years ago discovered by George F. Reinhardt, M. D., Health Officer.

In the case of diphtheria, bacilli carriers are regarded as important factors in the spread of the disease. Years ago American bacteriologists reached a consensus of opinion that two per cent of the healthy individuals of a community harbor typhoid typical diphtheria bacilli, and that the percentage rises high among convalescents and those exposed to clinical cases. The significance of these facts is beginning to receive recognition in connection with the spread of diphtheria by milk. A milk bourn diphtheria epidemic in Oroville, brought to light by J. E. Knauss, D. V. S., Health Officer, and verified by the present writer, as due to bacilli carriers, has been mentioned in a previous issue of the Bulletin.

To illustrate the trend of opinion about bacilli carriers, a quotation is presented from the program of the section on Hygiene and Sanitary Science of the A. M. A. meeting in Chicago.

12. Milk as a Carrier of Infection. JOHN W. TRASK, U. S. P. H. and M.-H. S.

*Abst.*—The important part played by milk in the production and spread of epidemics of typhoid fever, scarlet fever and diphtheria, also the part played by it as one of the etiologic factors during periods of prevalence of these diseases in cities where no pronounced epidemic exists. Special reference made to the possible danger to the community of chronic bacilli carriers and of mild, undiagnosed attacks of the infectious diseases among the handlers of milk. The probability that milk also plays some part in the spread of tuberculosis is briefly discussed. The frequency of milk epidemics is brought out and some interesting outbreaks reviewed.

13. The Disinfection After Diphtheria Insufficient Unless it Includes Animate as Well as Inanimate Carriers of Contagion. MYER SOLIS COHEN, Philadelphia.

*Abst.*—Diphtheria bacilli are deposited not only on inanimate objects near a diphtheria patient, but also frequently on the throats of persons who have been in contact with the patient. Such persons may themselves contract diphtheria subsequent to terminal disinfection of the sickroom, or, acting as "carrier cases," may infect others. A house that has harbored a diphtheria patient, therefore, must not be regarded as free from contagion until negative cultures have been obtained from the throats of all the inmates.

And the remedy? No one need even dream of a system of market milk inspection thorough enough to guard against the dangers to which attention has been called. Whether sanitarians like it or not, pasteurization is widely practiced by city milk dealers, with the primary object of improving the keeping quality of milk. The problem now is to secure effective pasteurization with the least modification of the present practice of city dairymen. This, by no means, will ever supersede dairy inspection or the practice of cleanliness, for it is well recognized that clean milk only yields the best results on pasteurization.

We need more work along the line of studying the reported cases of infectious diseases with reference to the source of the milk supply and the effect of pasteurization upon the morbidity from these diseases.

## DEPARTMENT OF PURE FOODS AND DRUGS.

PROF. M. E. JAFFA, DIRECTOR.

### ON THE PREPARATION AND KEEPING OF CHOPPED MEATS.

In the April Bulletin of this Board it was stated that the State Food and Drug Laboratory would coöperate with the Federal authorities for the purpose of the better enforcement of the State meat inspection laws. In accordance therewith, a number of samples of meats and meat-food products were collected and analyzed. The result of these analyses showed that adulteration is extensively practiced. The materials used for this purpose are chiefly borax and sulphur dioxid, neither of which preservative is allowed to be used in meats and meat-food products.

When the new meat inspection law first went into effect there was a great hue and cry by the butchers as to the impossibility of making these meat-food products without the use of such preservatives. As an illustration, the following excerpt from a lecture\* by the Hon. Geo. P. McCabe, Chief Solicitor for the Department of Agriculture, may not be out of place:

Few people are aware that no preservative or chemical other than common salt, sugar, wood smoke, vinegar, pure spices, and saltpeter, may be used in any meat or meat-food product bearing the legend "U. S. Inspected and Passed." A wonderful revolution in this matter has been accomplished, quietly but effectively, within the last five months. The former practice can best be illustrated by a remark made by a small packer to the Secretary of Agriculture. In discussing the subject of preservatives in sausage, he said: "Mr. Secretary, what is reasonable is reasonable. What I want to use is a little borax, a little salicylic acid, a little anilin dye, and a little preservaline, and I can make sausage all right." He is making sausage now without using any of these substances.

I have been told by the attorney for one of the largest food interests in the United States, that when a certain manufacturer of sausage was informed that the Department had forbidden the use of preservatives he replied: "That does not affect me. I do not use any preservative." His informant continued that the Department had forbidden the use of borax, at which he exclaimed: "Heavens! My business is ruined."

Evidently some butchers of this State agree to a certain extent with some of the opinions expressed in the above quotation. At the recent meeting of the State Board of Health it was openly stated by some butchers that it was impossible to take fresh meat, grind it as for Hamburger steak, place the same in the refrigerator after grinding, and have meat so prepared in an edible condition at the close of the day. It was a further contention of these butchers that it was a better proposition for the general public to add some preservative and thus prevent decomposition than to run the risk of the meat's spoiling and causing digestive disturbances if it were consumed. The Board of Health, however, did not share in these opinions, and in order to

\* U. S. Department of Agriculture, Bureau of Animal Industry, Circular No. 101, page 9.

settle this question, the following experiment was carried out at the State Laboratory:

Twenty pounds of fresh beef (round steak) was purchased on Monday, July 13th, at 9 A. M. This was brought to the Laboratory, put through a meat chopper, placed on an eighteen-inch graniteware platter, and set in the refrigerator at 11:00, the temperature of the refrigerator being 50° F. At 5:00 P. M. of the same day there was nothing objectionable in any way with reference to this chopped meat, either in odor, color, or taste. The next morning, July 14th, at 11:00 A. M., about one pound was removed from the platter by one of the assistants, taken to her home, and cooked as Hamburger steak usually is. The statements of the persons who partook of this meat were that it was absolutely unobjectionable in every way. At 6:00 P. M. of the same day four pounds of the meat was taken from the platter, divided into two portions, and cooked at two different homes; again the verdict was that there was nothing objectionable in any way—that it was just as good chopped meat as any member of the respective households had ever eaten. It is thus seen that the meat was in a perfectly edible condition thirty hours after being placed in the refrigerator. On July 15th at 1:00 P. M., the remainder of the meat, fifty hours after it had been placed in the refrigerator, was used at the bacteriological laboratory for making bouillon. This proves that the meat was in good condition, as otherwise it could not have been used for bacteriological preparations. In fact, it was stated by those in charge of the bacteriological laboratory, that the meat was, even then, in an edible condition.

It is thus seen that there is no foundation for the opinions expressed by the butchers at the meeting above referred to. It is true that the use of certain preservatives will give a more uniform color to meat, not retaining the original meat color, but giving a new, and as above stated, a more uniform, color.

With reference to the change of color in meat on standing, it may be said that after a few hours in the refrigerator the color on the exterior of a mass of chopped meat will be slightly different from that just below the surface of the mass. But this change is not objectionable from a physiological point of view, and does not indicate any deterioration whatever in the food value of the meat. The public should be educated to the fact that an absolutely uniform color in a mass of chopped meat is not an indication of the high quality or freshness of such meat.

It should be emphasized that this whole matter is not a question of opinion, but a question of law, and the law states very definitely that "No preservative or chemical other than common salt, sugar, wood smoke, vinegar, pure spices, and saltpeter, may be used in any meat or meat-food product."

It is hoped that the foregoing may prove of service to those most particularly interested in this matter.

### **LABELING OF GREEN, DRIED, AND CANNED FRUITS.**

Attention is directed to the provisions of Section 5 and Section 6 of the California Pure Foods Act, March 11, 1907.

The principle in these cases is the same as in the case of other food products,—the label must speak the truth. The name of the fruit contained in the package, its grade and class, must be truthfully set forth. It is not necessary to state the name of the packer or producer, nor the name of the place where the fruit is grown or packed, but if this information is given, it must not be false in any particular.

These provisions are regarded as being extremely important to the fruit industry, and they will be strictly enforced. No evasion, by use of corporate or firm names indicating place of production, or by other subterfuge, will be tolerated.

The maximum penalty for each violation of these provisions is a fine of five hundred dollars (\$500.00), imprisonment for six months, and seizure and destruction of all mislabeled goods.

### **WARNING TO CANDY MANUFACTURERS.**

Attention is called to Subdivision 7, Section 4, of the California Pure Foods Act, March 11, 1907, reading:

Food shall be deemed adulterated within the meaning of this act, in any of the following cases:

\* \* \* \* \*

In the case of confectionery: If it contain terra alba, barytes, talc, chrome yellow, or other mineral substance or poisonous color or flavor, or other ingredient deleterious or detrimental to health, or any vinous, malt, or spirituous liquor or compound or narcotic drug.

Among the substances which are deleterious or detrimental to health may be mentioned paraffin. This material is not allowed by law to be used in the manufacture of candy. An examination, however, of a large number of samples submitted to the State Laboratory shows that paraffin is being quite extensively used in the manufacture of different kinds of candy.

It is thought best to issue this note of warning in order that the use of such material in the manufacture of candies may be stopped.